



SEVERE ACUTE RESPIRATORY SYNDROME

GUIDELINES AND RECOMMENDATIONS

Updated Interim Guidance: Pre-Hospital Emergency Medical Care and Ground Transport of suspected Severe Acute Respiratory Syndrome Patients

Introduction

The current outbreak of Severe Acute Respiratory Syndrome (SARS) has included reports of cases in Southeast Asia, Europe, and North America; and has required ground emergency medical services (EMS) to move patients to medical facilities for further assessment and care (URL: www.cdc.gov/ncidod/sars/casedefinition.htm). This guidance is intended to assist Emergency Medical Services (EMS) providers to manage suspected SARS patients while ensuring the safety of patients and transport personnel. These interim recommendations are based on standard infection control practices and available epidemiologic information regarding the transmission of SARS.

Currently recommended infection control measures for hospitalized patients with SARS (www.cdc.gov/ncidod/sars/ic.htm) include Standard precautions (with eye protection to prevent droplet exposure), plus Contact and Airborne precautions. Respiratory protection using respirators providing at least 95% filtering efficiency (e.g., N-95) with appropriate fit-testing is recommended (www.osha.gov/SLTC/etools/respiratory/oshafiles/fittesting1.html). The following guidelines are adapted from these recommendations.

I. Emergency medical services ground transport of suspected SARS patients, general considerations

- Suspected SARS patients should be transported using the minimum number of EMS personnel and without non-SARS patients or passengers in the vehicle.
- Receiving facilities must be notified prior to arrival of suspected SARS patients to facilitate preparation of appropriate infection control procedures and facilities.
- Concerns regarding movement of possible SARS patients in the United States should be discussed with appropriate local, state and federal health authorities, including the Centers for Disease Control and Prevention (CDC) (24 hour response number: (770) 488-7100).

II. Infection Control

General:

- In addition to respiratory droplet and possible airborne spread, SARS may be transmitted if residual infectious particles on environmental surfaces are brought into direct contact with the eyes, nose or mouth, e.g., by unwashed hands. Therefore, hand hygiene is of primary importance for all personnel working with possible SARS patients (see www.cdc.gov/handhygiene/).
- Protective equipment should be used throughout transport of a suspected SARS patient.
- Personal activities (including: eating, drinking, application of cosmetics, and handling of contact lenses) should not be performed during patient transport.

Protective equipment and procedures:

- Disposable, non-sterile gloves must be worn for all patient contact.
- Gloves should be removed and discarded in biohazard bags after patient care is completed (e.g., between patients) or when soiled or damaged.

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- Hands must be washed or disinfected with a waterless hand sanitizer immediately after removal of gloves.
- Disposable fluid-resistant gowns should be worn for all direct patient care.
- Gowns should be removed and discarded in biohazard bags after patient care is completed or when soiled or damaged.
- Eye-protection must be worn in the patient-care compartment and when working within 6 feet of the patient. Corrective eyeglasses alone are not appropriate protection.
- N-95 (or greater) respirators should be worn by personnel in the patient-care compartment during transport of a suspected SARS patient; personnel wearing respirators should be fit tested.
- The door/window between driver and patient compartments should be closed before a suspected SARS patient is brought onboard. N-95 (or greater) respirators should be worn by the driver if the driver's compartment is open to the patient-care compartment. Drivers that provide direct patient care (including moving patients on stretchers) should wear a disposable gown, eye-protection, and gloves as described above during patient-care activities. Gowns and gloves are not required for personnel whose duties are strictly limited to driving.
- Vehicles that have separate driver and patient compartments and can provide separate ventilation to these areas are preferred for transport of possible SARS patients. If a vehicle without separate compartments and ventilation must be used, the outside air vents in the driver compartment should be open, and the rear exhaust ventilation fans should be turned on at the highest setting during transport of SARS patients to provide relative negative pressure in the patient care compartment.
- Oxygen delivery with non-rebreather facemasks may be used for patient oxygen support during transport.
- The patient may wear a paper surgical mask to reduce droplet production, if tolerated.
- Positive pressure ventilation should be performed using a resuscitation bag-valve mask. If available, units equipped for HEPA or equivalent filtration of expired air should be used.
- Cough-generating procedures should be avoided during pre-hospital care (e.g., nebulizer treatments).

III. Mechanically Ventilated Patients

- EMS organizations should consult their ventilator equipment manufacturer to confirm appropriate filtration capability and the effect of filtration on positive pressure ventilation.
- Mechanical ventilators for SARS-patient transport should provide HEPA or equivalent filtration of airflow exhaust.

IV. Clinical Specimens

- Standard precautions must be used when collecting and transporting clinical specimens.
- Clinical specimens should be labeled with appropriate patient information and placed in a clean self-sealing bag for storage and transport.

V. Waste disposal

- Dry solid waste, e.g., used gloves, dressings, etc., should be collected in biohazard bags for disposal as regulated medical waste in accordance with local requirements at the destination hospital.
- Waste that is saturated with blood, body fluids, or excreta should be collected in leak-proof biohazard bags or containers for disposal as regulated medical waste in accordance with local requirements at the destination hospital.
- Sharp items such as used needles or scalpel blades should be collected in puncture resistant sharps containers for disposal as regulated medical waste in accordance with local requirements at the destination hospital.

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- Suctioned fluids and secretions should be stored in sealed containers for disposal as regulated medical waste in accordance with local requirements at the destination hospital. Handling that might create splashes or aerosols during transport should be avoided.
- Suction devices should be fitted with in-line HEPA or equivalent filters in accordance with manufacturer's recommendations.

VI. Cleaning and Disinfection after transporting a possible SARS patient

- Compressed air that might re-aerosolize infectious material should not be used for cleaning the vehicle or reusable equipment.
- Non-patient-care areas of the vehicle should be cleaned and maintained according to vehicle manufacturer's recommendations.
- Personnel performing cleaning should wear non-sterile gloves, disposable gowns and eye-protection while cleaning the patient-care compartment.
- Patient-care compartments (including stretchers, railings, medical equipment, control panels, and adjacent flooring, walls and work surfaces likely to be directly contaminated during care) should be cleaned using an EPA-registered hospital disinfectant in accordance with manufacturer's recommendations.
- Spills of body fluids during transport should be cleaned by placing absorbent material over the spill and collecting the used cleaning material in a biohazard bag. The area of the spill should be cleaned using an EPA-registered hospital disinfectant. Cleaning personnel should be notified of the spill location and initial clean-up performed.
- Contaminated reusable patient care equipment should be cleaned and disinfected promptly after use and before returning to service.
- Personnel should wear non-sterile gloves, disposable gowns and face shields while cleaning reusable equipment.
- Reusable equipment should be cleaned and disinfected according to manufacturer's instructions.

VII. Follow-up of EMS Personnel who Transport suspected SARS Patients

- Personnel who have transported a suspected SARS patient and develop symptoms of SARS within the 10 day post-exposure period should be directed to seek medical evaluation and should be reported to the state health department and to the CDC at the number listed above.
- Personnel may continue working during the 10 day post-exposure period if they have no symptoms of fever or respiratory illness.

Acknowledgments

This guidance was prepared in cooperation with and with contributions from:

National Council of State EMS Training Coordinators

Executive Committee of the National Association of State EMS Directors (NASEMSD)

For more information, visit www.cdc.gov/ncidod/sars or call the CDC public response hotline at (888) 246-2675 (English), (888) 246-2857 (Español), or (866) 874-2646 (TTY)

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